CLAIMS:

1. A method of measuring an apparent depth of a section of an animal body, the section being defined by first and second interfaces, comprising the steps:

a) focusing a monochromatic incident beam of light to a plurality or continuum of measurement locations along a measurement line passing through the section, the measurement line being generated by an optical element adapted to provide an extended focal region for monochromatic light, such that incident light is focused to all measurement locations along the measurement line concurrently;

b) detecting light reflected from at least one of the plurality of measurement locations when a respective interface is coincident therewith;

c) generating at least a first and a second signal representative of the detected light reflected from the first and second interfaces respectively; and

d) deriving from the first and second signals the apparent positions of the first and second interfaces.

2. The method of claim 1, wherein the section is the aqueous humor of an eye and the apparent depth is an optical path length through the aqueous humor.

3. The method of claim 2, wherein the first interface is a surface between the cornea and the aqueous humor of the eye and the second interface is a surface between the aqueous humor and the ocular lens of the eye.

4. The method of claim 2, further comprising the step of comparing the derived apparent depth with a previous reference measurement of the apparent depth, so as to

determine a change in the refractive index of the aqueous humor.

5. The method of claim 4, further comprising the step of calculating a measure of change in a concentration of glucose within the bloodstream of a patient from the change of refractive index.

6. The method of claim 1, wherein the detected light is arranged to comprise substantially only light which has been focused to a measurement location and reflected by an interface coincident therewith.

7. The method of claim 1, wherein the optical element is an axicon lens.

8. The method of claim 1, wherein reflected light is detected after being received at a pinhole aperture, adapted to be translatable through a range of positions confocal with respective ones of the plurality of measurement locations, such that light reflected from ones of the measurement locations having a respective interface coincident therewith may be detected by scanning the pinhole aperture through the range.

9. The method of claim 1, further comprising the step of generating light having two or more wavelengths, such that two or more properties of the eye may be measured.

10. An apparatus for measuring an apparent depth of a section of an animal body, the section being defined by first and second interfaces, comprising:

a) an optical focusing assembly, comprising an optical element adapted to provide an expanded focal region

for monochromatic light, the optical focusing assembly being adapted to focus a monochromatic incident beam of light to a plurality or continuum of measurement locations along a measurement line passing through the section, such that incident light is focused to all measurement locations along the measurement line concurrently;

b) a detector assembly, adapted to detect light reflected from at least one of the plurality of measurement locations when a respective interface is coincident therewith and to generate a signal representative of that detected light; and

c) a processor in communication with the detector assembly and adapted to receive from the detector assembly first and second signals corresponding to detected light reflected from the first and second interfaces respectively and to derive therefrom apparent positions of the first and second interfaces.

11. The apparatus of claim 10, wherein the processor is further adapted to compare the derived apparent depth with a previous reference measurement of the apparent depth, such that a change in the refractive index of the section may be determined.

12. The apparatus of claim 10, wherein the optical element is an axicon lens.

13. The apparatus of claim 10, wherein the detector assembly comprises a pinhole aperture and a detector, the pinhole aperture being adapted to be translatable through a range of positions confocal with respective ones of the plurality of measurement locations, such that light reflected from one of the measurement locations having a

respective interface coincident therewith may be detected by scanning the pinhole aperture through the range.

14. The apparatus of claim 10, further comprising a light source, adapted to produce the incident beam of light and being further adapted such that the light has one of a substantially single wavelength or a plurality of substantially discrete wavelengths.

15. A method of measuring an apparent depth of a section of an eye comprising analysing an intensity-position profile of monochromatic light reflected concurrently from the section of the eye.

16. A micro-electromechanical system, comprising the apparatus of claim 10.

17. A hand-held device, comprising the apparatus of claim 10.

18. A hand-held device, comprising the micro-electromechanical system of claim 16.